

**SECTION 1404**  
**LIGHT STANDARDS**

**1404-1 DESCRIPTION**

Furnish and install light standards less than 55 ft high complete with bracket arm(s), including the impact attenuation device (breakaway base) as shown in the plans.

**1404-2 MATERIALS**

Provide a standard that meets the design criteria of the *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* and the Interim Specifications valid at the time of letting. The support is to be designed for the wind velocity shown in the plans.

Provide a standard designed to support an ellipsoidal shaped luminaire, which has a center of gravity not more than 18" from the end of the support, with a minimum weight and projected area and a bracket arm length as indicated in the contract.

Make sure that each lighting standard has a grounding lug in the standard located within 6" of the handhole or in the transformer base.

Deliver standards with a smooth uniform finish, free of disfiguring scratches or dents and with suitable protection for further handling during erection.

Wrap or package each light standard as recommended by the manufacturer to prevent damage during shipping and handling. Repair or replace, at the option of the Engineer, any standards with abraded finishes or other damage.

Furnish aluminum or steel standards and arms; however, use the elected material throughout the project.

Galvanize steel components after fabrication. Use galvanization which conforms to the requirements of ASTM A123 for tubes, plates and bars and to ASTM A153 for hardware.

Use connecting bolts, washers and nuts compatible with the transformer base as recommended by the light standard manufacturer and which comply with the contract.

Use anchor bolts, washers, nuts and shims which comply with the Specifications and details shown in the plans as recommended by the light standard and transformer base manufacturer(s).

Furnish anchor and/or connecting bolt covers and pole top caps with standards as indicated in the plans.

Provide pole hardware such as nuts, bolts and washers for aluminum standards from 18-8 stainless steel or aluminum alloy 2024-T4. Provide nuts, bolts and washers for steel standards from 18-8 stainless steel or steel conforming to ASTM A307. Submit drawings for approval which show material specifications for each component.

Use bracket arms for each standard which are the length shown in the plan sheet and of the same material as the standard.

Provide light standards with an approved impact attenuation feature (breakaway base) that complies with *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* and one of the following descriptions:

- (A) A cast aluminum transformer base,
- (B) A frangible base insert or adapter, or
- (C) A slip base.

Use the same type of breakaway device throughout the entire project. All breakaway devices shall be FHWA approved. Include in the device protection for wiring and conduit at the base of the standard, in the form of a special heavy-formed material secured in place.

#### 1404-3 CONSTRUCTION METHODS

Locate and number the light standards as shown in the plans.

Do not lay the standards on the ground without proper blocking and protection to prevent warping and discoloration. Protect the standards from damage by other construction work, including landscape mulching and fertilizing operations.

Securely mount the standards on the anchor bolts, and plumb up with nuts torqued according to the manufacturer's recommendation.

Mounting height is defined as vertical distance from luminaire to surface of pavement of heaviest traveled lane in area illuminated by the luminaire. A tolerance of  $\pm 1.5$  ft from the required mounting height will be permitted. If this tolerance is exceeded, furnish and install an acceptable standard within this tolerance.

#### 1404-4 MEASUREMENT AND PAYMENT

*Light Standards*, \_\_\_\_ will be measured and paid as the actual number of light standards with arm assemblies of each appropriate mounting height and bracket arm type and length installed and accepted.

Payment will be made under:

Pay Item	Pay Unit
Light Standards, ____	Each

### SECTION 1405 STANDARD FOUNDATION

#### 1405-1 DESCRIPTION

Furnish and install all materials necessary to construct concrete foundations for light standards, including concrete, reinforcing steel, anchor bolts, nuts, forms, excavation and backfilling.

#### 1405-2 MATERIALS

Refer to Division 10.

Item	Section
Conduit	1400-2(B)
Metal Shroud	1400-4(I)
Portland Cement Concrete, Class A	1000
Reinforcing Steel	1070

Provide Type 3 material certifications in accordance with Article 106-3 for conduit and anchor bolt assemblies. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store foundation and anchor bolt assembly materials so materials are kept clean and free of damage.